

CLAIMS

What is claimed is:

1. A method of partitioning authors on a given topic in a newsgroup into two opposite classes of the authors, the method comprising:
 - identifying all links among the authors, wherein each link represents a response from one of the authors to another of the authors; and
 - analyzing the identified links, wherein the identified links are assumed to be more likely to be antagonistic links rather than non-antagonistic links.
2. The method of claim 1 wherein the identifying comprises:
 - assigning a vertex of a graph to each of the authors; and
 - assigning an edge of the graph to each interaction between two of the assigned vertices corresponding to two of the authors.
3. The method of claim 2 wherein the analyzing comprises:
 - creating a co-citation matrix of the graph, wherein the co-citation matrix comprises the assigned vertices and the assigned edges;
 - setting a weighted edge with a weight of w for each set of two of the assigned vertices only if the number of the authors to whom both members of the set have responded is w ; and
 - solving a min-weight approximately balanced cut problem on the co-citation matrix, thereby generating the two opposite classes of the authors.
4. The method of claim 2 wherein the analyzing comprises solving a max cut problem on the graph, wherein the graph comprises the assigned vertices and the assigned edges, thereby generating the two opposite classes of the authors.
5. The method of claim 3 wherein the solving comprises calculating the second eigenvector of the co-citation matrix, thereby generating the two opposite classes of the authors.

6. The method of claim 5 further comprising applying a Kernighan-Lin heuristic on the second eigenvector of the co-citation matrix.
7. The method of claim 2 further comprising fixing the assigned vertices of the authors who are most prolific.
8. The method of claim 7 wherein the analyzing comprises:
creating a co-citation matrix of the graph, wherein the co-citation matrix comprises the assigned vertices, the assigned edges, and the fixed assigned vertices of the most prolific authors;
setting a weighted edge with a weight of w for each set of two of the assigned vertices only if the number of the authors to whom both members of the set have responded is w ; and
solving a min-weight approximately balanced cut problem on the co-citation matrix, thereby generating the two opposite classes of the authors.
9. The method of claim 7 wherein the analyzing comprises solving a max cut problem on the graph, wherein the graph comprises the assigned vertices, the assigned edges, and the fixed assigned vertices of the most prolific authors, thereby generating the two opposite classes of the authors.
10. The method of claim 8 wherein the solving comprises calculating the second eigenvector of the co-citation matrix, thereby generating the two opposite classes of the authors.
11. The method of claim 10 further comprising applying a Kernighan-Lin heuristic on the second eigenvector of the co-citation matrix.
12. A system of partitioning authors on a given topic in a newsgroup into two

opposite classes of the authors, the system comprising:

an identifying module configured to identify all links among the authors, wherein each link represents a response from one of the authors to another of the authors; and

an analyzing module configured to analyze the identified links, wherein the identified links are assumed to be more likely to be antagonistic links rather than non-antagonistic links.

13. The system of claim 12 wherein the identifying module comprises:

a vertex assigning module configured to assign a vertex of a graph to each of the authors; and

an edge assigning module configured to assign an edge of the graph to each interaction between two of the assigned vertices corresponding to two of the authors.

14. The system of claim 13 wherein the analyzing module comprises:

a creating module configured to create a co-citation matrix of the graph, wherein the co-citation matrix comprises the assigned vertices and the assigned edges;

a setting module configured to set a weighted edge with a weight of w for each set of two of the assigned vertices only if the number of the authors to whom both members of the set have responded is w ; and

a solving module configured to solve a min-weight approximately balanced cut problem on the co-citation matrix, thereby generating the two opposite classes of the authors.

15. The system of claim 13 wherein the analyzing module comprises a solving module configured to solve a max cut problem on the graph, wherein the graph comprises the assigned vertices and the assigned edges, thereby generating the two opposite classes of the authors.

16. The system of claim 14 wherein the solving module comprises a calculating module configured to calculate the second eigenvector of the co-citation matrix, thereby

generating the two opposite classes of the authors.

17. The system of claim 13 further comprising a fixing module configured to fix the assigned vertices of the authors who are most prolific.

18. The system of claim 17 wherein the analyzing module comprises:

a creating module configured to create a co-citation matrix of the graph, wherein the co-citation matrix comprises the assigned vertices, the assigned edges, and the fixed assigned vertices of the most prolific authors;

a setting module configured to set a weighted edge with a weight of w for each set of two of the assigned vertices only if the number of the authors to whom both members of the set have responded is w ; and

a solving module configured to solve a min-weight approximately balanced cut problem on the co-citation matrix, thereby generating the two opposite classes of the authors.

19. The system of claim 17 wherein the analyzing module comprises a solving module configured to solve a max cut problem on the graph, wherein the graph comprises the assigned vertices, the assigned edges, and the fixed assigned vertices of the most prolific authors, thereby generating the two opposite classes of the authors.

20. A computer program product usable with a programmable computer having readable program code embodied therein partitioning authors on a given topic in a newsgroup into two opposite classes of the authors, the computer program product comprising:

computer readable code for identifying all links among the authors, wherein each link represents a response from one of the authors to another of the authors; and

computer readable code for analyzing the identified links, wherein the identified links are assumed to be more likely to be antagonistic links rather than non-antagonistic links.